

REMARKS

By the present Amendment, Applicant has amended claims 21 and 27 to more appropriately define his invention, and has added new claims 33-40 to protect additional aspects of his invention. Claims 21-40 are pending.

In the final Office Action, the Examiner rejected claims 21-26 under 35 U.S.C. § 102(e) as anticipated by Ikeda et al. (U.S. Patent No. 6,671,025); and rejected claims 27-32 under 35 U.S.C. § 103(a) as unpatentable over Ikeda et al. in view of Sawasaki et al. (U.S. Patent Pub. No. 2001/0026347). Applicant respectfully traverses these rejections.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C. § 102, each and every element of the claim in issue must be found, "either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See M.P.E.P. § 2131, 8th ed., Rev. of May 2004.

The rejection of claims 21-26 under 35 U.S.C. § 102(e) is improper, because Ikeda et al. does not teach each and every element of these claims.

For example, claim 21 recites, inter alia,

a second substrate having a plurality of first areas and a plurality of second areas, wherein the first areas and the second areas are on a side of the second substrate facing the first substrate, and a surface of the second substrate is higher in the first areas than in the second areas;

...

a plurality of second protrusions disposed on the first substrate corresponding to the second areas of the second substrate, tops of the second protrusions separated from the second areas of the second substrate by a predetermined distance in such a manner that the second protrusions contact the second areas of the second substrate when the liquid crystal display panel is subjected to an external force to maintain a second cell gap between the first and second substrates, the second cell gap being smaller than the first cell gap.

Ikeda et al. fails to teach at least these elements. The Examiner apparently considered Ikeda et al.'s TFT substrate 30 as corresponding to Applicant's claimed second substrate, Ikeda et al.'s drain bus lines 33a, gate bus lines 33b, and auxiliary capacitance electrodes 33c as corresponding to Applicant's claimed first areas, and Ikeda et al.'s pixel electrodes 32 as corresponding to Applicant's claimed second areas. Office Action, page 2; see Ikeda et al., Fig. 12, and col. 6, l. 50 - col. 7, l. 9. However, contrary to the Examiner's allegation, Ikeda et al. does not teach that a surface of TFT substrate 30 is higher in the areas of drain bus lines 33a, gate bus lines 33b, and auxiliary capacitance electrodes 33c than in the areas of pixel electrodes 32. The Examiner alleged that "a surface of the second substrate [30] is higher in the first area [33a-33c] than in the second areas [32]," because "the first area comprises of TFT elements having multiple electrode layers." Office Action, pages 2-3. Applicant respectfully disagrees and requests that the Examiner provide support for his allegation. Absent such support, Applicant submits that Ikeda et al. fails to teach at least "a surface of the second substrate is higher in the first areas than in the second areas," as recited in claim 1.

In addition, Ikeda et al. also fails to teach that "tops of the second protrusions [are] separated from the second areas of the second substrate by a predetermined distance in such a manner that the second protrusions contact the second areas of the

second substrate when the liquid crystal display panel is subjected to an external force to maintain a second cell gap between the first and second substrates, the second cell gap being smaller than the first cell gap,” as recited in claim 1. The Examiner considered Ikeda et al.’s projection patterns 55 formed over color filters 53 (53R, 53G, 53B) as corresponding to Applicant’s claimed second protrusions. Office Action, page 3; see Ikeda et al., col. 12, ll. 21-28. However, Ikeda et al. does not teach that projection patterns 55 formed over color filters 53 are separated from the surface of TFT substrate 30 by a predetermined distance such that projection patterns 55 contact the surface of TFT substrate 30 when the liquid crystal display shown in Fig. 12 is subjected to an external force.

Because Ikeda et al. fails to teach or suggest each and every element of claim 21, claim 21 is allowable over Ikeda et al. Claims 22-26 depend from claim 21 and are also allowable at least because of their dependence from an allowable base claim.

Applicant also respectfully traverses the rejection of claims 27-32 under 35 U.S.C. § 103(a) as unpatentable over Ikeda et al. and Sawasaki et al., because a prima facie case of obviousness has not been established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in

the prior art, and not based on applicant's disclosure. M.P.E.P. § 2143, 8th ed.,
Revision of May 2004.

Independent claim 27 recites, inter alia,

a thin film transistor substrate having a plurality of first areas and a plurality of second areas, wherein the first areas and the second areas are on a side of the thin film transistor substrate facing the color substrate, and a surface of the thin film transistor substrate is higher in the first areas than in the second areas;

...

a plurality of second protrusions disposed on the thin film transistor substrate in the second areas, tops of the second protrusions separated from the color filter substrate by a predetermined distance in such a manner that the second protrusions contact the color filter substrate when the liquid crystal display panel is subjected to an external force to maintain a second cell gap between the color filter and thin film transistor substrates, the second cell gap being smaller than the first cell gap.

For reasons already set forth above with regard to claim 21, Ikeda et al. fails to teach or suggest at least these elements of claim 27.

Sawasaki et al. fails to cure the deficiencies of Ikeda et al. Sawasaki et al. is directed to liquid crystal display devices with spacers and projections having different heights formed on a color filter (CF) substrate, NOT on a thin film transistor substrate. See Sawasaki et al., ABSTRACT. For example, in Fig. 39, spacers 225a and 225b having different heights are formed on CF substrate 220. The areas of TFT substrate 210 confronting spacers 225a and 225b, are at the same height. Sawasaki et al., paragraph [0222] on page 13 and paragraph [0225] on page 14. In Fig. 48, spacers 251 and 252 having different heights are formed on CF substrate 240. The areas of TFT substrate 230 confronting spacers 251 and 252, are at the same height. Sawasaki et al., paragraphs [0272] and [0278] on page 17. Therefore, Sawasaki et al. does not

teach or suggest at least “a thin film transistor substrate having a plurality of first areas and a plurality of second areas, . . . a surface of the thin film transistor substrate is higher in the first areas than in the second areas; . . . a plurality of second protrusions . . . , tops of the second protrusions separated from the color filter substrate by a predetermined distance in such a manner that the second protrusions contact the color filter substrate . . . when the liquid crystal display panel is subjected to an external force,” as required by independent claim 27.

Thus, Ikeda et al. and Sawasaki et al., taken alone or in combination, fail to teach or suggest each and every element of independent claim 27. Claim 27 and its dependent claims 28-32 are therefore patentable over Ikeda et al. and Sawasaki et al.

Finally, neither Ikeda et al. nor Sawasaki et al. teaches or suggests each and every element of new independent claim 33. For example, both Ikeda et al. and Sawasaki et al. fail to teach or suggest at least

a first substrate having a plurality of first areas and a plurality of second areas, wherein a surface of the first substrate has the same height in the first areas and in the second areas;

. . .

a plurality of first protrusions disposed on the first areas of the first substrate and substantially contacting the first areas of the second substrate; and

a plurality of second protrusions disposed on the second areas of the first substrate, tops of the second protrusions being separated from the second areas of the second substrate by a predetermined distance,

as recited in claim 33. Therefore, claim 33 and its dependent claims 34-40 are also allowable.


In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of pending claims 21-40.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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